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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/CEMENT/2014-15

Date: 28.06.2014

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	a) Initial Setting Time	IS-4031 (Part -5)	150 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	495 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	25.50 %	-

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Job No.: CTCE/BBMP/W.No.07/KRIDL/SAND/2014-15 : 28.06.2014

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 28.06.2014

Material : Sand Total Wt. of Aggregates in gms **2000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	95	4.75	4.75	95.3	90-100
2.36	227	11.35	16.10	83.9	75-100
1.18	493	24.65	40.75	59.3	55-90
600 Micron	405	20.25	61.00	39.0	35-59
300 Micron	512	25.60	86.60	13.4	8-30
150 Micron	207	10.35	96.95	3.1	

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Job No.: CTCE/BBMP/W.No.07/KRIDL/AGG/2014-15 : 28.06.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 28.06.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **25000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	885	3.54	3.54	96.46	95-100
20	15260	61.04	64.58	35.42	30-70
10	5945	23.78	88.36	11.64	10-35
4.75	2420	9.68	98.04	1.96	0-5

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Job No.: CTCE/BBMP/W.No.07/KRIDL/STEEL/2014-15 28.06.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West)**, KRIDL, Bangalore.
Name of the work	:	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Date of Test	:	28.06.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	513	553	13.15	O.K	O.K

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Job No.: CTCE/BBMP/W.No.07/KRIDL/STEEL/2014-15 28.06.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
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Reference	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Date of Test	:	28.06.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	12	0.89	515	557	13.40	O.K	O.K

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Job No.: CTCE/BBMP/W.No.07/KRIDL/STEEL/2014-15 28.06.2014

TEST REPORT ON REINFORCEMENT STEEL

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Reference	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Date of Test	:	28.06.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm^2	Tensile strength (Ultimate stress) N/mm^2	Elongation percent gauge length		
1	16	1.59	518	562	13.60	O.K	O.K

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Job No.: CTCE/BBMP/W.No.07/KRIDL/CUBE/2014-15 28.07.2014

TEST REPORT ON CONCRETE CUBES

Client	: **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager (West),** KRIDL, Bangalore.
Name of the work	: Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	: AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 28^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	30.06.2014	28.07.2014	8.395	492.6	21.89
2	30.06.2014	28.07.2014	8.476	507.2	22.54
3	30.06.2014	28.07.2014	8.527	526.7	23.41

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15

10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25500**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	985	985	3.9	96.1	95-100
22.4	6180	7165	28.1	71.9	60-80
11.2	5475	12640	49.6	50.4	40-60
4.75	4360	17000	66.7	33.3	25-40
2.36	3725	20725	81.3	18.7	15-30
0.600	2150	22875	89.7	10.3	8-22
0.075	2340	25215	98.9	1.1	0-8

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GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

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Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): **26520**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	785	785	3.0	97.0	95-100
22.4	8205	8990	33.9	66.1	60-80
11.2	4940	13930	52.5	47.5	40-60
4.75	3980	17910	67.5	32.5	25-40
2.36	3208	21118	79.6	20.4	15-30
0.600	2939	24057	90.7	9.3	8-22
0.075	1868	25925	97.8	2.2	0-8

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GRADATION FOR WMM
MORTH TABLE-400-11

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Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): 27715

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	835	835	3.0	97.0	95-100
22.4	8655	9490	34.2	65.8	60-80
11.2	5024	14514	52.4	47.6	40-60
4.75	4316	18830	67.9	32.1	25-40
2.36	3159	21989	79.3	20.7	15-30
0.600	2475	24464	88.3	11.7	8-22
0.075	2356	26820	96.8	3.2	0-8

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15 19.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): **26000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	915	915	3.5	96.5	95-100
22.4	6435	7350	28.3	71.7	60-80
11.2	4879	12229	47.0	53.0	40-60
4.75	3526	15755	60.6	39.4	25-40
2.36	3421	19176	73.8	26.2	15-30
0.600	4125	23301	89.6	10.4	8-22
0.075	1974	25275	97.2	2.8	0-8

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15 10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): 25815

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	875	875	3.4	96.6	95-100
22.4	6285	7160	27.7	72.3	60-80
11.2	5490	12650	49.0	51.0	40-60
4.75	4315	16965	65.7	34.3	25-40
2.36	3787	20752	80.4	19.6	15-30
0.600	2314	23066	89.4	10.6	8-22
0.075	1854	24920	96.5	3.5	0-8

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15 10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): **26860**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1025	1025	3.8	96.2	95-100
22.4	7835	8860	33.0	67.0	60-80
11.2	5174	14034	52.2	47.8	40-60
4.75	5185	19219	71.6	28.4	25-40
2.36	2592	21811	81.2	18.8	15-30
0.600	2247	24058	89.6	10.4	8-22
0.075	2052	26110	97.2	2.8	0-8

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GRADATION FOR WMM
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Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): 26255

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	910	910	3.5	96.5	95-100
22.4	6470	7380	28.1	71.9	60-80
11.2	4876	12256	46.7	53.3	40-60
4.75	3792	16048	61.1	38.9	25-40
2.36	3335	19383	73.8	26.2	15-30
0.600	4221	23604	89.9	10.1	8-22
0.075	2016	25620	97.6	2.4	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15 10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample ID : WMM Layer Oven Dry Wt (gm): **26795**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	928	928	3.5	96.5	95-100
22.4	6679	7607	28.4	71.6	60-80
11.2	4893	12500	46.7	53.3	40-60
4.75	3675	16175	60.4	39.6	25-40
2.36	3526	19701	73.5	26.5	15-30
0.600	4171	23872	89.1	10.9	8-22
0.075	2028	25900	96.7	3.3	0-8

Note:

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